

GP-301614

ENGINE OPERATING METHOD AND APPARATUS

ABSTRACT OF THE DISCLOSURE

- An internal combustion engine includes a plurality of cylinders each having intake and exhaust valves and at least one camshaft timed to operate the valves with a high performance fixed overlap. Each camshaft
- 5 has a cam phaser controlled to equally vary the intake and exhaust valve timing for superior full throttle performance over the engine speed range; Valve deactivation mechanisms operate to deactivate up to half the cylinders during idle and light load operation for increasing fuel efficiency and emission control and maintaining stable operation of the operating cylinders.
- 10 The engine may also be started with half the cylinders cut out and then run with stable operation in this mode during idle and light load because the increased load on the operating cylinders gives stable operation with an increased valve overlap permitting increased performance and emission control at higher load operation on all the cylinders.